TECHNICAL REVIEW DOCUMENT
for
RENEWAL TO OPERATING PERMIT 95OPMR010

Colorado Interstate Gas Company, LLC – Ft. Morgan Compressor Station
Morgan County
Source ID 0870003

Prepared by Jacqueline Joyce
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Revised February and March 2013

Reviewed by:

Operating Permit Supervisor:	Matt Burgett
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I. Purpose:

This document establishes the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewal and modification of the Operating Permit for Colorado Interstate Gas Company. LLC's (CIG's) Ft. Morgan Compressor Station. The current Operating Permit for this facility was issued on July 1, 2006. The expiration date was July 1, 2011. However, since a timely and complete renewal application was submitted, under Colorado Regulation No. 3, Part C, Section IV.C all of the terms and conditions of the existing permit shall not expire until the renewal Operating Permit is issued and any previously extended permit shield continues in full force and operation. This document is designed for reference during review of the proposed permit by EPA, the public, other interested parties and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on the renewal application submitted on July 1, 2010, additional information received on December 12, 2012, comments on the draft permit and technical review document received on March 22, 2013, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at www.colorado.gov/cdphe/airTitleV. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating

permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

This facility is a natural gas storage and transmission facility and is classified under the Standard Industrial Classification 4922. Gas is compressed to specification for injection to a field reservoir using six (6) internal combustion engines to power compressor units. Upon withdrawal from the reservoir, the gas is processed through a triethylene glycol dehydrator to remove any liquids that were absorbed during storage. The ethylene glycol dehydrator is equipped with a flare to control VOC emissions. Other significant emission units identified in Section II of the permit include the glycol dehydrator reboiler, a plant flare that is used to combust waste gases from a liquid/gas separator, an emergency generator and several process heaters.

The plant is located approximately 5 miles south of Fort Morgan, CO in an area designated as attainment for all criteria pollutants.

There are no affected states within 50 miles of the plant. There are no Federal Class I designated areas within 100 kilometers of the plant.

The summary of emissions that was presented in the Technical Review Document for the previous renewal permit has been updated to reflect the potential to emit (PTE) of both criteria (all criteria) and HAP pollutants due to change that may have occurred in emission factors and/or emission limitations since the previous renewal permit was issued. Emissions (in tons/yr) at the facility are as follows:

	Emissions (tons/yr)					
Emission Unit	$PM/PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC	HAPs
E003[1]	0.27	1.57E-02				See Table 2 on Page 22
E004[1]	0.3	1.77E-02				
E005[1]	0.3	1.77E-02	356.9	48.6	10.2	
E006[2]	0.27	1.61E-02				
E007[2]	0.27	1.61E-02	34	51	13	
E008	0.37	2.20E-02	22.2	26.7	7.4	
Emerg. Gen.[3]	8.99E-03	5.29E-04	0.72	0.48	0.21	
Dehy[4]			4.73	25.7	40.9	
Dehy Reboiler	0.22	1.74E-02	2.8	4.6	0.16	
Misc. Heaters[5]	0.65	5.15E-02	8.59	7.21	0.47	
Fugitite VOC Emissions					0.58	
Plant Flare			0.45	2.47	0.42	
Total	**2.66**	**1.75E-01**	**430.39**	**166.76**	**73.34**	**41.5**

[1] NO_X, CO and VOC emissions limitations are for all three engines together.
[2] NO_X, CO and VOC emissions limitations are for both engines together.
[3] Emergency Generator emissions based on 500 hours per year of operation (in accordance with the September 6,

1995 EPA Memo, "Calculating Potential to Emit (PTE) for Emergency Generators").
[4]Dehydrator is equipped with a flare.
[5]Combined heat input rate of 20 MMBtu/hr assumed.

Potential to Emit indicated in the above table is based on the following information:

Criteria Pollutants:

In the above table, criteria pollutant PTE is based on the following:

Dehydrator, Reboiler and engines E003 through E008: PTE is based on permitted emissions. Note that for the engines and reboiler, PM, PM_{10}, $PM_{2.5}$ and SO_2 emissions are based on AP-42 emission factors (Sections 3.2 (dated 7/00) for the engines and 1.4 (dated 3/98) for the reboiler), the design heat input rate (in MMBtu/hr) and allowable hours of operation.

Emergency Generator: PTE is based on emission factors (manufacturer's for NO_X, CO and VOC and AP-42 (Section 3.2 (dated 7/00)) for PM, PM_{10}, $PM_{2.5}$ and VOC), maximum rate (either site rated hp or MMBtu/hr) and 500 hours per year of operation (in accordance with the September 6, 1995 EPA Memo, "Calculating Potential to Emit (PTE) for Emergency Generators").

Miscellaneous Heaters: PTE is based on AP-42 emission factors (Section 1.4 (dated 3/98)), the combined heat input rate (in MMBtu/hr) and 8760 hours per year of operation.

Fugitive VOC emissions: PTE is based on the emission information provided in the February 13, 2006 application submitted for the TEG dehydrator (component count, emission factors from EPA's "Protocol for Equipment Leak Emission Estimates" and VOC content per recent gas analysis).

Hazardous Air Pollutant (HAP) Emissions:

In the above table, the breakdown of HAP emissions by emission unit and individual HAP is provided on page 22 of this document. As indicated in the table footnotes on page 22, the HAP PTE was determined as follows:

Engines E003 – E008: HAP PTE is based on permitted hours of operation, maximum rate (site rated hp) and the GRI HAPCalc version 3.0 field test emission factors, or if no field test factors then the higher of either the GRI literature or EPA factors, except that formaldehyde emissions from engines E003 through E005 are based on the July 2004 performance test factors and for engine E008 formaldehyde emissions are based on permitted emissions.

Emergency Generator: HAP PTE is based on 500 hours per year of operation, maximum rate (site rated hp) and the GRI HAPCalc version 3.0 field test emission factors, or if no field test factors then the higher of either the GRI literature or EPA factors.

Dehydrator: HAP PTE for the dehydrator is based on the GLYCalc run used to set the permit limits (based on 8760 hours per year of operation). Note that the HAP emissions included in this table are based on traditional PTE methods and do not rely on the methods provided for in accordance with 40 CFR Part 63 Subpart HHH § 63.1270(a)(1) (note that HAP emissions for the dehydrator based on the Subpart HHH methods are shown in Table 1 on page 21).

Fugitive VOC Emissions: HAP PTE is based on emission information provided in the February 13, 2006 application submitted for the TEG dehydrator (component count, emission factors from EPA's "Protocol for Equipment Leak Emission Estimates" and the weight percent of HAPs in the wet gas analyses used in the GLYCalc run to set the permit limits for the dehydrator).

Dehydrator Reboiler and Miscellaneous Heaters: HAP PTE is based on AP-42 emission factors, the heat input rate (max MMBtu/hr for reboiler, combined MMBtu/hr for misc. heaters) and 8760 hours per year of operation.

Actual emissions are shown in the table below and emissions are based on the data year indicated.

Emission Unit	Data Year	Actual Emissions (tons/yr)					
		$PM/PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC	HAPS
Engine E003	2010 + 25%[1]	0.1	0.01	45.7	6.24	1.32	0.8
Engines E004 & E005	2010 + 25%[1]	0.23	0.01	94.7	12.9	2.7	1.53
Engines E006 & E007	2010 + 25%[1]	0.23	0.01	14.1	21.1	5.2	1.51
Engine E008	2009 + 25%[2]	0.13	0.01	7.45	8.96	2.65	0.41
TEG Dehy	2009 PTE[2]			4.73	25.7	40.9	9.37
TEG Reboiler	2010 PTE[2]	0.2	0.02	2.8	4.6	0.16	
Plant Flare	2010 PTE[2]			0.45	2.47	0.42	
Total		0.89	0.06	169.93	81.97	53.35	13.62

[1]Emissions reported on APEN received March 25, 2011
[2]Emissions reported on APEN received December 8, 2010

National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories

Both major and minor (area) sources of HAPs may be subject to NESHAPs for specific source categories (hereafter referred to as "MACT requirements"). The applicability of various MACT requirements were discussed to some extent in the technical review document prepared to support the second renewal of this permit (issued July 1, 2006). That discussion has been updated to reflect changes to the various MACT standards and the promulgation of any new standards that may apply.

Note that the above table and the associated HAP breakdown Table (Table 2 shown on

page 22) represents potential HAPS based on traditional PTE methods (i.e. permit limits or equipment operating at design rate for 8760 hrs/yr).

For purposes of Title V, a source would be considered major for HAPs under the traditional PTE methods if HAPs exceed the major source levels of 10 tons/yr of any single HAP and 25 tons/yr of combined HAPs. However, some of the MACT requirements do not rely on traditional PTE methods to determine major source status and so while a source might be major for HAPs under the Title V permit program it may not be considered a major source for HAPs under all of the various MACT standards that might apply to the source.

HAP Source Status History

A detailed discussion of the HAP source status (major vs. minor source) history for the Ft. Morgan Station was discussed in the technical review document prepared to support the second renewal (issued July 1, 2006) but a brief summary has been included in this document.

In the first renewal (issued April 1, 2002), the Division determined that the facility was a minor source (also referred to as an area source) for HAP emissions. In 2003, CIG added engine E008 to the facility through a minor modification and with the addition of this engine, HAPs were still below the major source level (emissions were based on AP-42 emission factors). Due to concerns that formaldehyde emissions estimated using AP-42 emission factors for lean burn engines were low and the fact that formaldehyde emissions were over 8 tons/yr, the Division indicated to CIG that emissions should be estimated using manufacturer's emission factors. In lieu of using manufacturer's emission factors, CIG opted to test certain engines for formaldehyde and discovered that formaldehyde emissions put the facility over the major source level. Prior to the compliance dates for the remaining engines and the two ethylene glycol (EG) dehydrators and startup of the triethylene glycol (TEG) dehydrator, CIG removed the EG dehydrators, took operating limits on the existing engines and formaldehyde limits on engine E008 and became an area source for HAPs.

Natural Gas Transmission and Storage (NGTS) Facility MACT (40 CFR Part 63 Subpart HHH)

The HAP analysis shown in Table 1 (page 21) relies on the provisions in the NGTS MACT which allow emissions from glycol dehydrators to be based on levels other than traditional PTE(design rate or permitted emissions). Based on maximum natural gas throughput rate for the triethylene glycol (TEG) dehydrator, calculated in accordance with the provisions in 40 CFR Part 63 Subpart HHH § 63.1270(a)(1), the facility is an area source of HAP emissions as indicated on Table 1 on page 21 (total HAPs are below 20 tons/yr). The dehydrator emissions shown on Table 1 (page 21) are based on the same GLYCalc parameters used to set the permit limits but lower hours of operation.

The provisions in 40 CFR Part 63 Subpart HHH apply to glycol dehydrators located at major sources of HAPs. Therefore, since the facility is not a major source of HAPs for purposes of the NGTS MACT, these requirements do not apply. Note that although revisions to the requirements in 40 CFR Part 63 Subpart HHH on April 17, 2012 were published in the Federal Register on August 16, 2012, these revisions have not changed the fact that the provisions in Subpart HHH apply to major sources only.

As previously stated, some MACT standards define major sources using traditional PTE methods and others, such as the NGTS MACT use different procedures. Therefore, this source could be a major source for some MACT standards and an area source for others. An analysis of the other MACT standards potentially applicable to the equipment at this source is as follows:

Paint Stripping and Miscellaneous Surface Coating at Area Sources (40 CFR Part 63 Subpart HHHHHH)

The final rules for paint stripping and miscellaneous surface coating were published in the Federal Register on January 9, 2008 and apply to area sources that perform paint stripping operations using methylene chloride, spray application of coatings to motor vehicles and mobile equipment and spray application of coatings that contain the target HAPS (chromium, lead, manganese, nickel or cadmium). The definition of a major source in this rule (§ 63.11170(b)) appears to be based on traditional PTE. Therefore, the Ft. Morgan facility would be considered a major source and these requirements do not apply.

Gasoline Dispensing Facilities (40 CFR Part 63 Subpart CCCCCC)

EPA promulgated National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities in 40 CFR Part 63 Subpart CCCCCC which were published in the Federal Register on January 10, 2008 and apply to gasoline dispensing facilities (GDF) located at area sources (minor sources for HAPS). There are two 1,000 gallon gasoline tanks included in the insignificant activity list. 40 CFR Part 63 Subpart CCCCC does not contain a definition of major source, therefore, presumably “major source” and “potential to emit” are defined in accordance with 40 CFR Part 63 Subpart A § 63.2, which are based on traditional PTE. Therefore, the Ft. Morgan facility would be considered a major source and these requirements do not apply.

Reciprocating Internal Combustion Engines (40 CFR Part 63 Subpart ZZZZ)

The reciprocating internal combustion engine (RICE) MACT was signed as final on February 26, 2004 and was published in the Federal Register on June 15, 2004. Under this rulemaking only RICE that were > 500 hp and located at major sources of HAPS were subject to the requirements. Subsequent revisions were made to the RICE MACT to address new engines $\leq$ 500 hp located at major sources and new engines of all sizes at area sources (final rule published January 18, 2008), existing compression ignition engines $\leq$ 500 hp at major sources and all sizes at area sources (final rule published

March 3, 2010) and existing spark ignition engines ≤ 500 hp at major sources and all sizes at area sources (final rule published August 20, 2010). Revisions were made to the RICE MACT on January 30, 2013. The January 30, 2013 revisions did not change the applicability requirements but did change the specific requirements for some engines (e.g. engines greater than 500 hp located at area sources of HAPs).

Since the RICE MACT was initially promulgated (June 2004), the definition of potential to emit in the RICE MACT has included the provisions in the NGTS MACT for calculating potential to emit from glycol dehydrators. Subsequent revisions to the RICE MACT have not changed the definitions of potential to emit and so as indicated in the HAP analysis shown in Table 1 (page 21), the Ft. Morgan Compressor Station is currently not a major source for HAPs for purposes of the RICE MACT.

As discussed previously, when engine E008 was initially installed in 2003 the Division presumed that the facility was an area source for HAPs. However, shortly afterwards it was determined that the facility was a major source for HAPs. Since engine E008 commenced construction after December 19, 2002 and was site rated at greater than 500 hp, the compliance date for this engine was August 16, 2004. The facility was still a major source for HAPs on August 16, 2004, therefore, engine E008 was subject the major source MACT requirements. Under the "once-in-always in" policy, even though the facility became an area source in 2006, the major source MACT requirements still apply to engine E008.

Under the initial MACT requirements (June 15, 2004), the remaining engines were classified as existing engines and had until June 15, 2007 to comply with the requirements. The Ft. Morgan facility became an area source in 2006, therefore, the initial MACT requirements did not apply to the remaining engines.

There is a natural gas-fired emergency generator included in the insignificant activity list which would qualify as existing (construction commenced prior to June 12, 2006) and therefore would be subject to requirements in the RICE MACT. As a result this engine will be removed from the insignificant activity list and included in Section II of the permit.

In addition, the natural gas fired engines included in Section II of the current permit (Engines E003 through E007) are considered existing (construction commenced prior to June 12, 2006) and therefore also subject to requirements in the RICE MACT.

<u>Industrial, Commercial and Industrial Boilers located at major sources (40 CFR Part 63 Subpart DDDDD) and area sources (40 CFR Part 63 Subpart JJJJJJ)</u>

Unlike the RICE MACT, the MACT for industrial, commercial and institutional boilers and process heaters located at major sources (40 CFR Part 63 Subpart DDDDD) does not appear to allow sources to use the provisions from the NGTS MACT to determine HAP emissions from glycol dehydrators, so it would seem that HAP emissions from the dehydrator would have to be based on traditional PTE methods. As indicated in Table 2 (page 22), using traditional PTE the Ft. Morgan facility is major for HAPs. Therefore, the NGTS equipment is potentially subject to the requirements in 40 CFR Part 63

Subpart DDDDD (major sources) and the requirements in 40 CFR Part 63 Subpart JJJJJJ do not apply since the Ft. Morgan facility is not an area source.

EPA promulgated National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters in 40 CFR Part 63 Subpart DDDDD on March 21, 2011. As discussed above, it appears that these requirements may apply to some of the fuel burning equipment at this facility. In their December 12, 2012 submittal, CIG identified the equipment that is subject to the requirements in 40 CFR Part 63 Subpart DDDDDD. Since all of the fuel-burning equipment at the facility burns natural gas, only work practice standards (i.e., boiler tune-ups) apply.

EPA proposed revisions to the Boiler MACT on December 23, 2011 and final revisions to the Boiler MACT were published in the Federal Register on January 31, 2013. The January 31, 2013 final rules have no affect on the applicability of the Boiler MACT to the boilers and process heaters at this facility.

New Source Performance Standards (NSPS)

EPA has promulgated NSPS requirements for new source categories since the issuance of the first renewal permit for this facility. NSPS requirements generally only apply to new or modified equipment and the Division is not aware of any modifications to existing equipment or additions of new equipment that would render equipment at this facility subject to NSPS requirements. However, because the recently promulgated NSPS requirements address equipment that may not be subject to APEN reporting or minor source construction permit requirements, the applicability of some of the newly promulgated requirements are being addressed here.

NSPS Subpart JJJJ – Stationary Spark Ignition Engines

NSPS Subpart JJJJ applies to stationary spark ignition engines that commenced construction, reconstruction or modification after June 12, 2006 and were manufactured after specified dates. The date the engine commenced construction is the date the engine was ordered by the owner/operator. The engines at this facility commenced operation prior to June 12, 2006 and there is no indication that these units have been modified. As discussed under the RICE MACT, the emergency generator commenced construction (on-site construction) prior to June 12, 2006. Therefore, the requirements in NSPS Subpart JJJJ do not apply to any of the engines at this facility.

NSPS Subpart IIII – Stationary Compression Ignition Engines

NSPS Subpart IIII applies to stationary compression ignition engines that commenced construction, reconstruction or modification after July 11, 2005 and were manufactured after specified dates. The date the engine commenced construction is the date the engine was ordered by the owner/operator. There are no compression ignition engines located at the Ft. Morgan Compressor Station; therefore, the requirements in NSPS Subpart IIII do not apply.

NSPS Subpart OOOO – Crude Oil and Natural Gas Production, Transmission and Distribution

The provisions in NSPS Subpart OOOO apply to several affected facilities at crude oil and natural gas production, transmission and distribution facilities that commenced construction, modification or reconstruction after August 23, 2011. The affected facilities under NSPS OOOO include gas wells, compressors (centrifugal and reciprocating), pneumatic controllers, storage vessels, equipment leaks associated with process units (i.e., equipment used to extract natural gas liquids from field gas) and sweetening units located at onshore natural gas processing plants. In the first case, the facility commenced operation well before August 23, 2011 and it is not apparent that any equipment at the facility was constructed, reconstructed or modified after August 23, 2011; however, the Division has reviewed the potential applicability with respect to the individual affected facilities.

The pneumatic controllers and compressors are only affected facilities if they are located between the wellhead and the natural gas transmission and storage segment. Since this facility is a natural gas storage facility (hence part of the natural gas transmission and storage segment), any compressors or pneumatic controllers are not affected facilities, regardless of when they were constructed, reconstructed or modified.

Under the rule, gas wells are defined as “an onshore well drilled principally for production of natural gas”. While gas may be injected into wells at the Ft. Morgan Compressor Station for storage, the wells are for storage of pipeline quality natural gas, not for production of natural gas. Therefore, there are no wells at this facility that meet the definition of “gas well” under Subpart OOOO.

Equipment associated with process units and sweetening units located at onshore natural gas processing plants are affected facilities under Subpart OOOO. There are no sweetening units at this facility. Process units extract natural gas liquids from field gas, so essentially a process unit is what makes a facility an onshore natural gas processing plant. The technical review document prepared for the August 12, 2004 revised permit, discussed the fact that although this facility contains equipment that extracts natural gas liquids from natural gas, the facility is not a gas processing plant because liquids are not extracted from field gas but from pipeline quality natural gas that absorbs hydrocarbons during storage. The Ft. Morgan Compressor Station is a natural gas storage facility and not a gas plant; therefore, any process unit at this facility is not an affected facility, regardless of when it was constructed, reconstructed or modified.

Any storage vessels with VOC emissions greater than or equal to 6 tons/yr of VOC that commenced construction, reconstruction or modification after August 23, 2011 would be an affected facility and would be subject to the requirements in Subpart OOOO. While there are a number of storage vessels included in the insignificant activity list in the permit, these tanks have been included in the permit since 1997. Therefore they don’t meet the applicability date (i.e. commenced construction, reconstruction or modification after August 23, 2011) and they are not affected facilities.

In summary, there are no Subpart OOOO affected facilities located at the Ft. Morgan Compressor Station so the requirements in Subpart OOOO do not apply.

Colorado Regulation No. 7, Section XVII – Statewide Requirements for Oil and Gas Operations

The requirements in Section XVII were adopted in December 2006 and revised in December 2008, apply statewide and include requirements for condensate tanks, glycol dehydrators and natural gas-fired engines.

Condensate tank and glycol dehydrator requirements

Although actual uncontrolled emissions from condensate tanks are below the applicability levels in Section XVII.C (20 tons/yr), the Division considers that these requirements were intended to apply to condensate tanks located at facilities either located upstream or at a natural gas processing plant (i.e. would not apply to condensate tanks in the natural gas transmission and storage category). This facility is a natural gas storage facility and is within the natural gas transmission and storage category. As a result these requirements do not apply.

Glycol dehydrator requirement

The requirements in Section XVII apply to glycol dehydrators with actual uncontrolled VOC emissions above 15 tons/yr. The 15 tons/yr actual emission threshold is based on emissions from all glycol dehydrators on site combined. However, as discussed above for condensate tanks these requirements do not apply to glycol dehydrators located at natural gas storage facilities. Therefore, the requirements in Colorado Regulation No. 7, Section XVII.D do not apply to the glycol dehydrator at this facility.

Engine requirements

The requirements in Section XVII apply statewide to both new and existing natural-gas fired engines. The requirements for engines are found in Section XVII.E. The requirements for existing engines in XVII.E.3 apply to engines that were constructed or modified before February 1, 2009 greater than 500 hp. Existing engines greater than 500 hp are required to install either non-selective catalytic reduction devices (for rich burn engines) or oxidation catalysts (for lean burn engines).

In accordance with Section XVII.B.4, the requirements in Section XVII do not apply to engines that are subject to an emissions control standard in a MACT. Since engine E008 is subject to MACT emission control standards the requirements in Section XVII.E do not apply to this engine.

If sources can demonstrate that the cost for retrofit controls exceeds $5,000 per ton the engine is exempt from the control requirements. The demonstration of costs exceeding $5,000 per ton must be received by August 1, 2009. All the existing engines at this

facility are lean burn engines and potentially subject to the requirements in Section XVII.E.3.b. CIG submitted a request for an exemption to the control requirements for engines E003 through E007 and the Division granted the exemption in a letter dated December 21, 2009.

The requirements for new engines in Section XVII.E.2 depend on the date the engine commenced construction or relocation and the size of the engine. Engines E003 through E008 are not new and therefore, the requirements for new engines in Section XVII.E.2 do not apply.

Note that as specified in Section XVII.E.1 the requirements in Section XVII.E do not apply to engines with actual, uncontrolled emissions below the minor source construction permit thresholds in Colorado Regulation No. 3, Part B. Therefore, they do not apply to the emergency generator.

Compliance Assurance Monitoring (CAM) Requirements

Engines E003 through E007, the emergency generator and the dehydrator reboiler are not equipped with a control device; therefore, CAM does not apply to these emission units.

In the technical review document for the second renewal of this permit (issued June 1, 2006), the Division indicated that CAM did not apply to engine E008 because the control device was installed to meet the MACT requirements and MACT emission limitations are exempt from CAM under the provisions of 64.2(b)(1)(i). The technical review document for the second renewal also indicated that the engine was originally installed without controls and that the control device is not required to meet the permitted emission limitations for CO or VOC and uncontrolled emissions of HAP from the engine do not exceed the major source level. Therefore, CAM does not apply to engine E008.

CAM for the TEG dehydrator was addressed in the second renewal (issued June 1, 2006). No changes to the CAM requirements for the TEG dehydrator are necessary for this renewal.

Repealed APEN Exemptions

Since the second Title V renewal permit was processed (issued June 1, 2006) the following APEN exemptions were repealed: Produced water tanks (Reg 3, Part A, Section II.D.1.uu), Crude oil tanks < 40,000 gal (Reg 3, Part A, Section II.D.1.ddd), Engines – limited size and hours (Reg 3, Part A, Section II.D.1.sss) and Emergency Generators – limited size and hours (Reg 3, Part A, Section II.D.1.ttt). While the APEN exemptions have been repealed, the corresponding insignificant activity designations for the crude oil and produced water tanks were not repealed (Reg 3, Part C, Section II.E.3.uu and ddd, respectively) and there is an insignificant activity category for engines (Reg 3, Part C, Section II.E.3.nnn) but it is different than the previous insignificant activity categories for engines and emergency generators. Although the specific APEN exemptions have been repealed for crude oil tanks, produced water tanks and engines,

these types of emission units are still exempt from APEN reporting requirements if actual, uncontrolled emissions are below the APEN de minimis level.

In the current Title V permit (last revised August 20, 2009), the insignificant activity list includes one emergency generator (no crude oil or produced water tanks are listed). CIG submitted information on December 12, 2012 indicating that actual, uncontrolled emissions from the emergency generator are below the APEN de minimis level. Note that since the emergency generator is subject to requirements in 40 CFR Part 63 Subpart ZZZZ it can no longer be considered an insignificant activity, so it will be removed from the insignificant activity list and included in Section II of the permit.

Greenhouse Gas Emissions

The potential-to-emit of greenhouse gas (GHG) emissions from this facility is less than 100,000 TPY CO_2e. Future modifications greater than 100,000 TPY CO_2e may be subject to regulation (Regulation No. 3, Part A, I.B.44).

III. Discussion of Modifications Made

Source Requested Modifications

The source's requested modifications were addressed as follows:

July 1, 2010 Renewal Application

In the renewal application, the only change requested by CIG was to update the permit contact person on the page following the cover page. Since the renewal application was submitted the permit contact has changed again and the permit was revised to include the appropriate contact.

March 22, 2013 Comments on the Draft Permit and Technical Review Document

In their March 22, 2013 comments on the draft permit and technical review document, the source requested the following changes:

Page Following Cover Page

- The source requested that the primary and secondary responsible officials be revised. The changes were made as requested.

Section II, Condition 1.1

- The source requested changes to the first sentences under the heaters "Injection Operation" and "Recovery Operation". The changes were made as requested.

Appendix A

- The source requested that the directions to the facility be revised. The changes were made as requested.

- The source requested that the insignificant activity list be revised as follows: indicate there are two methanol storage tanks (one 1,000 gal and one 2,000 gal), remove the 1,500 gal dirty oil tank, correct the size of the engine lube oil tank (should be 12,600 gal), remove the north and south gasoline storage tanks and add a 500 gal gasoline storage tank. The changes were made as requested.

Other Modifications

In addition to the source requested modifications, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments to the Ft. Morgan Compressor Station Renewal Operating Permit. These changes are as follows:

Page Following Cover Page

- Monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).

- Revised to reflect the name change to “Colorado Interstate Gas Company, LLC”. Also revised the address under “issued to” to include the street address, rather than the P. O. Box. The name change was also made to the page headers.

Section I – General Activities and Summary

- The description in Condition 1.1 has been revised to address the facility as it is currently. In addition, the language regarding the plant flare and temporary flare controlling the triethylene glycol dehydrator has been removed. The description was revised to indicate that an emergency generator and several process heaters are included in Section II of the permit.

- Condition 1.4 was revised to remove Section IV, Condition 3.d as a state-only requirement, since EPA approved these provisions into Colorado’s SIP effective October 6, 2008.

- The AOS for temporary and permanent engine replacement was included in Condition 2.

  The permanent engine replacement only applies to engines with permitted emissions below the significance level. Engines E006 through E008 can utilize the permanent AOS. The temporary AOS specifies 270 days for temporary engine replacement, since the permanent AOS cannot be provided for engines E003 through E005. It is expected that if a permanent engine replacement is required for one of these engines that either a modified Title V permit or a construction permit can be issued within that time frame.

- Minor language changes were made to Condition 3.1 (PSD).

- Revised Condition 4.1 (Accidental Release Prevention Program) to indicate that the facility is not subject to the requirements in 112(r). The source confirmed that the 112(r) requirements no longer apply to the facility.

- Minor language changes were made to Condition 6.2 to reflect revisions to 40 CFR Part 63 Subpart HHH.

- The following changes were made to the table in Condition 6.1:

  - Combined the emission unit no. and facility id columns.
  - The second column was labeled AIRS point number as that is more appropriate.
  - Added a column for startup date.
  - Added information indicating the purpose of the plant flare.
  - The emergency generator and process heaters no longer qualify as insignificant activities and have been included in the table.

<u>Sections II.1 and 2 – Engines E003 – E007</u>

- Note that as indicated previously, these engines are not subject to the requirements in Colorado Regulation No. 7, Section XVII.E.3.b, as they were granted an exemption under the provisions in Section XVII.E.3.b.(ii).

- Revisions were made to the RICE MACT (40 CFR Part 63 Subpart ZZZZ) on August 20, 2010 and these revisions apply to engines E003 through E007. Under the August 20, 2010 requirements these engines are subject to either an outlet CO emission limitation or a CO percent reduction requirement and the compliance date for these requirements is October 19, 2013.

  Revisions to the RICE MACT were published in the January 30, 2013 Federal Register and under these revisions, engines that are greater than 500 hp, located at an area source and are considered remote stationary RICE are subject to work practice standards. In their December 12, 2012 submittal the source indicated that engines E003 through E007 are considered remote stationary RICE.

The Division has included the work practice requirements that apply to these engines in Section II.7 and a reference to these requirements is included in Sections II.1 and 2.

- Removed Condition 2.6 (operation and maintenance requirements), since these engines will be subject to more specific operation and maintenance requirements under MACT Subpart ZZZZ.

Section II.3 – Engine E008

- A requirement was added to record engine hours of operation, since hours of operation are used to allocate fuel use.

- Minor language changes were made to the MACT requirements in Condition 3.4 to reflect changes made to 40 CFR Part 63 Subpart ZZZZ and to make the language more consistent with the regulation and other permits. In addition some changes have been made to the formatting, so condition numbers may have changed. Note that language concerning initial compliance testing and/or initial compliance demonstration have been removed since these requirements have been completed.

- The MACT general provisions (Condition 3.5) have been moved to Condition 3.4.

- Note that as indicated previously, this engine is not subject to the requirements in Colorado Regulation No. 7, Section XVII.E.3.b, because the engine is subject to emission control requirements in the RICE MACT (see Regulation No. 7, Section XVII.B.4).

- Removed Condition 3.8 (operation and maintenance requirements), since this engine is subject to more specific operation and maintenance requirements under MACT Subpart ZZZZ.

Section II.4 – Dehydrator

- Note that as discussed previously, this dehydrator is not subject to the requirements in Regulation No. 7, Section XVII.D because this facility is a natural gas storage facility.

- Removed the monthly emission limitations in Conditions 4.1 and 4.2 and the language related to determining monthly emission limitations. The monthly limitations only applied during the first year of operation after startup of the dehydrator.

- Condition 4.2.5 was reformatted to more clearly indicate the requirements that apply.

- Removed the monthly throughput limitations in Condition 4.4 and 4.5. The monthly limitations only applied during the first year of operation after startup of the dehydrator.

- Removed the initial compliance certification requirement in Condition 4.6 since this has been completed.

- Removed the initial performance test requirements in Condition 4.9 since the test has been completed.

Section II.5 – Maxon Reboiler

The Division considers that the Maxon reboiler is not subject to the requirements in Subpart DDDDD since it is part of an affected facility that is subject to another MACT standard as provided for in 40 CFR Part 63 Subpart DDDDD § 63.7491(h). Glycol dehydrators are an affected facility subject to the requirements in 40 CFR Part 63 Subpart HHH which applies to facilities that are major sources for HAPs. Although this facility is not a major source for HAPs with respect to the requirements in 40 CFR Part 63 Subpart HHH (NGTS MACT) and is not subject to any requirements under the NGTS MACT, the Division considers that the exclusion still applies because the reboiler is part of an affected source that is potentially covered under another MACT. It should be noted that this facility is only subject to the major source Boiler MACT requirements because the method for determining whether a facility is a major source or not is different between the Boiler and NGTS MACTs. If the NGTS methods were used to determine major source status, this facility would be an area source for HAPs and subject to the area source Boiler MACT (40 CFR Part 63 Subpart JJJJJJ). Under the area source Boiler MACT, none of the equipment at this facility would be subject to requirements under Subpart JJJJJJ.

Section II.6 – Portable Monitoring

- The portable monitoring language was updated.

Section II.7 – Insignificant Activities

With the removal of Engines E001 and E002, the potential to emit of formaldehyde is below 8 tons/yr. Therefore, tracking of insignificant activities is not required so this condition has been removed.

"New" Section II.7 – Reciprocating Internal Combustion Engine (RICE) MACT Requirements

The requirements in 40 CFR Part 63 Subpart ZZZZ that apply to engines E003 through E007 were included in this condition.

"New" Section II.9 – Boilers and Process Heaters

As indicated previously, since the Boiler MACT does not appear to allow sources to use the provisions from the NGTS MACT to determine HAP emissions from glycol dehydrators, it seems that HAP emissions from dehydrators would have to be based on traditional PTE methods. Based on traditional PTE methods for the dehydrator, the

facility is a major source for HAPs with respect to the Boiler MACT.

There are no boilers and process heaters included in Section II of the current permit but there is no de minimis level for affected facilities under the Boiler MACT. Therefore, any boilers or process heaters identified in the insignificant activity list would be subject to the Boiler MACT requirements. The Division requested that the source submit information indicating any boilers and process heaters that would be subject to the Boiler MACT.

In their December 12, 2012 information submittal, CIG listed the fuel burning equipment at the facility and provided the purpose for that equipment. In this submittal, CIG identified eight (8) well head heaters as process heaters subject to the Boiler MACT requirements. CIG indicated that one Weil McLain boiler (rated at 1.04 MMBtu/hr) and three Lochnivar boilers (each rated at 0.8 MMBtu/hr) are not actually boilers, since they do not have "the primary purpose of recovering thermal energy in the form of steam or water". The definition of process heater in § 63.7575 excludes units used for comfort or space heat, therefore the "boilers" do not meet the definition of process heaters since they are used primarily for comfort heat. Although the Lochnivar boilers provided heat tracing to storage tanks, their primary purpose is comfort heat. CIG noted other building and catalytic heaters used for comfort heat that would not meet the definition of process heaters. CIG also identified two water heaters which in accordance with § 63.7491(d) are not subject to the requirements in Subpart DDDDD (capacity of the water heaters is less than 120 gallons). Therefore only the eight (8) well head heaters are subject to the requirements in 40 CFR Part 63 Subpart DDDDD.

As discussed previously, the Division considers that the Maxon reboiler is not subject to the requirements in Subpart DDDDD since it is part of an affected facility that is subject to another MACT standard as provided for in 40 CFR Part 63 Subpart DDDDD § 63.7491(h).

Since the well head heaters are subject to the requirements in 40 CFR Part 63 Subpart DDDDD, under the catch-all provisions in Reg 3, Part C, Section II.E, they can no longer be considered insignificant activities because they are subject to federal NESHAP requirements. Therefore, these heaters have been removed from the insignificant activity list and included in "new" Section II.9 of the permit.

The process heaters are subject to the following applicable requirements:

- Except as provided for below, visible emissions shall not exceed 20% opacity (Reg 1, Section II.A.1)

- Visible emissions shall not exceed 30% opacity, for a period or periods aggregating more than six (6) minutes in any sixty (60) minute period, during fire building, cleaning of fire boxes, soot blowing, start-up, process modifications, or adjustment or occasional cleaning of control equipment (Reg 1, Section II.A.4)

  Based on engineering judgment, the Division believes that the operational activities of fire building, cleaning of fire boxes and soot blowing do not apply to these units.

In addition, since these units are not equipped with control equipment the operational activities of adjustment or occasional cleaning of control equipment also do not apply to these units. Process modifications and startup may apply to these units; however, based on engineering judgment, the Division believes that such activities would be unlikely to occur for longer than six minutes. Therefore, the 30% opacity requirement has not been included in the operating permit.

- Particulate matter emissions shall not exceed $0.5(FI)^{-0.26}$ lbs/MMBtu, where FI is the fuel input in MMBtu/hr (Reg 1, Section III.A.1.b).

- Boiler MACT requirements (40 CFR Part 63 Subpart DDDDD), which include the following:

    - Energy assessment

    - Boiler tune-ups

Since these units are not subject to APEN reporting or minor source construction permit requirements, the permit will not include any requirements for calculating emissions.

<u>"New" Section II.10 – Emergency Generator</u>

There is one engine included in the insignificant activity list that is considered insignificant under the provisions in Colorado Regulation No. 3, Part C, Section II.E.3.nnn,(ii) (emergency generators). However, under the "catch-all" provisions in Regulation No. 3, Part C, Section II.E, sources that are subject to any federal or state applicable requirement, such as National Emission Standards for Hazardous Air Pollutants (NESHAPs), may not be considered insignificant activities. EPA promulgated National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines on August 20, 2010 which apply to this engine; therefore, it can no longer be considered an insignificant activity. Although this unit cannot be considered an insignificant activity, since the Division has not adopted revisions to the RICE MACT promulgated after July 1, 2007, the engine is still exempt from APEN reporting and minor source construction permit requirements, provided actual, uncontrolled emissions do not exceed the APEN de minimis level.

Engine description is as follows:

Waukesha, Model No. H24GL, emergency generator engine, rated at 500 hp (site) and 7,200 Btu/hp-hr. Serial No. C-11746/1. Natural gas fired, 4-cycle lean burn engine.

The appropriate applicable requirements for this engine are as follows:

- Except as provided for below, visible emissions shall not exceed 20% opacity (Reg 1, Section II.A.1)

- Visible emissions shall not exceed 30% opacity, for a period or periods aggregating more than six (6) minutes in any sixty (60) minute period, during fire building, cleaning of fire boxes, soot blowing, start-up, process modifications, or adjustment or occasional cleaning of control equipment (Reg 1, Section II.A.4)

  Based on engineering judgment, the Division believes that the operational activities of fire building, cleaning of fire boxes and soot blowing do not apply to engines. In addition, since this engine is not equipped with control equipment the operational activities of adjustment or occasional cleaning of control equipment also do not apply to this engine. Process modifications and startup may apply to engines, however, based on engineering judgment, the Division believes that such activities would be unlikely to occur for longer than six minutes. Therefore, the 30% opacity requirement has not been included in the operating permit.

- 40 CFR Part 63 Subpart ZZZZ requirements – management practices (oil and filter change, inspect air cleaner and inspect hoses and belts)

- 40 CFR Part 63 Subpart A requirements

  Since this engine is not subject to any emission limitations, monitoring requirements, notification and reporting requirements the requirements in §§ 63.7. 63.8, 63.9 and 63.10 do not apply. In addition, since this emission unit is existing the requirements in § 63.5 (preconstruction review and notification requirements) do not apply. Finally, Table 8 of Subpart ZZZZ indicates that operation and maintenance requirements in 63.6(e) do not apply. Therefore, the permit will only include the prohibition and circumvention requirements in § 63.4.

Since this unit is not subject to APEN reporting or minor source construction permit requirements, the permit will not include any requirements for calculating emissions.

Note that emissions were estimated for this engine using manufacturer's emission as follows: NO_X – 2.6 g/hp-hr, CO – 1.75 g/hp-hr and VOC – 0.75 g/hp-hr.

Section III – Permit Shield

- Revised the table in Section III.1 (permit shield for non-applicable requirements) to indicate that the shield for the requirements in Regulation No. 1, Section III only applies to engines E003 through E009 and to more specifically identify the Reg 1 requirements and to revise the justification.

Section IV - General Conditions

- Added a version date.

- The paragraph in Condition 3.d indicating that the requirements are state-only has been removed, since EPA approved these provisions into Colorado's SIP effective October 6, 2008.

- The title for Condition 6 was changed from “Emission Standards for Asbestos” to “Emission Controls for Asbestos” and in the text the phrase “emission standards for asbestos” was changed to “asbestos control”.

- Condition 29 (VOC) was revised primarily to add the provisions in Reg 7, Section III.C as paragraph e although other minor language and format changes were made.

Appendices

- The following changes were made to the insignificant activity list in Appendix A:
    - Grouped activities by the insignificant activity categories and noted those categories for which records should be available to verify insignificant activity status.
    - Updated the list to incorporate those additions noted in the December 12, 2012 submittal.
    - Removed the well head heaters and included them in Section II of the permit since these units are subject to requirements in 40 CFR Part 63 Subpart DDDDD.
    - Removed the emergency generator and included it in Section II of the permit since it is subject to requirements in 40 CFR Part 63 Subpart ZZZZ.
- The following revisions were made to the tables in Appendices B and C:
    - The emergency generator and the eight well head heaters were included in the table.
    - Added information indicating the purpose of the plant flare.
    - The name change to “Colorado Interstate Gas Company, LLC” was reflected in Appendices B and C.
- Changed the Division contact for reports in Appendix D.

- Cleared the table in Appendix F.

Table 1: HAP Emissions as Calculated in Accordance with NGTS MACT Method

Facilitywide HAPs - Dehy emissions per MACT HHH Method

Unit	HAP Emissions (tons/yr)									
	acetaldehyde	acrolein	benzene	toluene	ethyl benzene	xylene	formaldehyde	n-hexane	methanol	**total**
E003*	3.86E-02	5.72E-02	1.60E-03	2.80E-02	2.50E-03	9.80E-03	1.21E+00	4.00E-03	3.38E-02	1.38E+00
E004*	4.25E-02	6.29E-02	1.70E-03	3.08E-02	2.70E-03	1.08E-02	1.33E+00	4.00E-03	3.72E-02	1.52E+00
E005*	4.25E-02	6.29E-02	1.70E-03	3.08E-02	2.70E-03	1.08E-02	1.33E+00	4.00E-03	3.72E-02	1.52E+00
E006*	1.43E-01	1.50E-01	3.08E-02	2.58E-02	2.10E-03	9.30E-03	1.62E+00	2.35E-02	1.09E-01	2.12E+00
E007*	1.43E-01	1.50E-01	3.08E-02	2.58E-02	2.10E-03	9.30E-03	1.62E+00	2.35E-02	1.09E-01	2.12E+00
E008	1.87E-01	1.97E-01	4.03E-02	3.38E-02	2.80E-03	1.21E-02	7.50E-01	3.08E-02	1.43E-01	1.40E+00
Dehy			**1.29E+00**	**4.40E+00**	**1.55E+00**	**2.08E+00**		**4.84E-02**		**9.37E+00**
Dehy Reboiler			6.10E-05	9.88E-05			2.18E-03	5.32E-02		5.55E-02
Emergency Gen*	1.38E-03	2.04E-03	5.65E-05	1.00E-03	8.87E-05	3.50E-04	5.24E-02	1.39E-05	1.20E-03	5.85E-02
Misc. Heaters***			1.80E-04	2.92E-04			6.44E-03	1.55E-01		1.62E-01
Fugitive VOCs			2.97E-03	7.16E-03	2.10E-03	2.10E-03		4.19E-03		1.85E-02
Total	5.97E-01	6.83E-01	1.40E+00	4.58E+00	1.57E+00	2.14E+00	7.91E+00	3.51E-01	4.71E-01	1.97E+01

*Engine limited to 7008 hrs/yr of operation.

**emergency generator emissions based on 500 hrs/yr of operation (per September 6, 1995 EPA Memo)

***Total combined heat input assumed to be 20 MMBtu/hr. Includes 8 wellhead heaters

Engine emissions are based on GRI HAPCalc version 3.0 field test emission factors, if no field test factors then GRI literature or EPA factors for each pollutant and except that for E003, E004 and E005 formaldehyde emission factor from July 2004 performance test and for E008 formaldehyde based on permitted emissions

Dehy emissions from GLYCalc run @ 2634 hrs/yr (per 63.1270(a)(1))

Fugitive VOC emissions are based on emissions noted in February 13, 2006 application.

Emission factors for dehy reboiler and misc. heaters are based on design heat input rate (MMBtu/hr), AP-42 emission factors and 8760 hrs/yr of operation.

Table 2: Potential to Emit of HAPS

Facilitywide HAPs - Dehy Emissions per GLYCalc Run Used to Set Permit Limits (Traditional PTE)

Unit	HAP Emissions (tons/yr)									
	acetaldehyde	acrolein	benzene	toluene	ethyl benzene	xylene	formaldehyde	n-hexane	methanol	**total**
E003*	3.86E-02	5.72E-02	1.60E-03	2.80E-02	2.50E-03	9.80E-03	1.21E+00	4.00E-03	3.38E-02	1.38E+00
E004*	4.25E-02	6.29E-02	1.70E-03	3.08E-02	2.70E-03	1.08E-02	1.33E+00	4.00E-03	3.72E-02	1.52E+00
E005*	4.25E-02	6.29E-02	1.70E-03	3.08E-02	2.70E-03	1.08E-02	1.33E+00	4.00E-03	3.72E-02	1.52E+00
E006*	1.43E-01	1.50E-01	3.08E-02	2.58E-02	2.10E-03	9.30E-03	1.62E+00	2.35E-02	1.09E-01	2.12E+00
E007*	1.43E-01	1.50E-01	3.08E-02	2.58E-02	2.10E-03	9.30E-03	1.62E+00	2.35E-02	1.09E-01	2.12E+00
E008	1.87E-01	1.97E-01	4.03E-02	3.38E-02	2.80E-03	1.21E-02	7.50E-01	3.08E-02	1.43E-01	1.40E+00
Dehy			**4.30E+00**	**1.46E+01**	**5.16E+00**	**6.91E+00**		**1.61E-01**		**3.12E+01**
Dehy Reboiler			6.10E-05	9.88E-05			2.18E-03	5.32E-02		5.55E-02
Emergency Gen*	1.38E-03	2.04E-03	5.65E-05	1.00E-03	8.87E-05	3.50E-04	5.24E-02	1.39E-05	1.20E-03	5.85E-02
Misc. Heaters***			1.80E-04	2.92E-04			6.44E-03	1.55E-01		1.62E-01
Fugitive VOCs			2.97E-03	7.16E-03	2.10E-03	2.10E-03		4.19E-03		1.85E-02
Total	5.97E-01	6.83E-01	4.41E+00	1.48E+01	5.18E+00	6.98E+00	7.91E+00	4.63E-01	4.71E-01	4.15E+01

*Engine limited to 7008 hrs/yr of operation.

**emergency generator emissions based on 500 hrs/yr of operation (per September 6, 1995 EPA Memo)

***Total combined heat input assumed to be 20 MMBtu/hr. Includes 8 wellhead heaters

Engine emissions are based on GRI HAPCalc version 3.0 field test emission factors, if no field test factors then GRI literature or EPA factors for each pollutant and except that for E003, E004 and E005 formaldehyde emission factor from July 2004 performance test and for E008 formaldehyde based on permitted emissions

Dehy emissions from GLYCalc run used to set permit limits (run @ 8760 hrs/yr)

Fugitive VOC emissions are based on emissions noted in February 13, 2006 application.

Emission factors for dehy reboiler and misc. heaters are based on design heat input rate (MMBtu/hr), AP-42 emission factors and 8760 hrs/yr of operation.